AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An oral phototherapy apparatus comprising

a body sized and shaped so as to fit at least partially in a user's mouth;

a plurality of optically transmissive bristles of elongate shape and having longitudinal axes, the bristles being coupled to the body and adapted to brush the user's teeth, wherein the bristles further comprise one or more fluorescent, luminescent or lasing elements; and

a therapeutic radiation source assembly having at least one radiation emitter optically coupled to the body and configured to irradiate with phototherapeutic radiation a portion of the oral cavity other than tissue in contact with the bristles, and wherein the radiation source assembly is optically coupled to at least one of the plurality of bristles to transmit therapeutic radiation.

2. (Previously Presented) The apparatus of claim 1 wherein said therapeutic radiation source assembly is configured to emit light in different directions.

3. (Previously Presented) The apparatus of claim 1 wherein the at least one radiation emitter irradiates both a region of tissue in contact with the bristles and a portion of the oral cavity that is not in contact with the bristles.

4. (Previously Presented) The apparatus of claim 1 wherein the therapeutic radiation source assembly includes at least one radiation emitter that irradiates tooth tissue in contact with the bristles and gum tissue surrounding the tooth tissue.

5. (Previously Presented) The apparatus of claim 1 wherein the at least one radiation emitter further comprises a source of radiation having wavelength components in at least two separate spectral bands.

6. (Currently Amended) The apparatus of claim 1 wherein the therapeutic radiation source assembly includes at least a second radiation emitter optically coupled to the body and

configured to irradiate with phototherapeutic radiation a portion of the oral cavity other than tissue in contact with the bristles and wherein the at least two radiation emitters are configured to emit different spectral bands of radiation~~, wherein said at least two sources are optically coupled to said at least one radiation emitter~~.

7. (Previously Presented) The apparatus of claim 1 wherein said therapeutic radiation source assembly includes at least one radiation source selected from the group of light-emitting diodes, superluminescent diodes, laser diodes, vertical cavity surface emitting lasers, fiber lasers, fluorescent solid-state sources, and lamps.

8. (Previously Presented) The apparatus of claim 1 wherein the apparatus further comprises a light diffuser optically coupled to the at least one radiation emitter to deliver diffuse radiation to the oral cavity.

9. (Previously Presented) The apparatus of claim 8 wherein said diffuser comprises an optically transmissive element with a partially etched cladding.

10. (Cancelled)

11. (Cancelled)

12. (Previously Presented) The apparatus of claim 1 wherein the bristles are coupled to the emitter to receive and propagate radiation therefrom.

13. (Previously Presented) The apparatus of claim 1 wherein the bristles are at least partially coated with a reflective material.

14. (Currently Amended) The apparatus of ~~claim 10~~ claim 1 wherein the bristles have at least one shape, relative to an elongated direction of the bristles, selected from the group of conical, tapered, curved and spiral shapes.

15. (Previously Presented) The apparatus of claim 1 wherein the bristles are shaped to transmit radiation upon contact between the bristles and a portion of the oral cavity.

16. (Cancelled)

17. (Previously Presented) The apparatus of claim 1 wherein the bristles are incorporated into a brush head, which is removable and replaceable.

18. (Previously Presented) The apparatus of claim 1 wherein the bristles are coupled to at least a second radiation emitter to receive and transmit radiation.

19. (Previously Presented) The apparatus of claim 1 wherein the apparatus further comprises a plurality of bristles and at least a portion of radiation from the at least one radiation emitter is emitted in a direction which is not parallel to the bristles.

20. (Previously Presented) The apparatus of claim 1 wherein the light refractive characteristics of the optically transmissive bristles are selected to inhibit light transmission to the oral cavity in the absence of contact between the bristle and a surface of the teeth or cavity.

21. (Cancelled)

22. (Original) The apparatus of claim 1 wherein the apparatus further comprises a contact sensor and controller which controls the radiation emitter based on signals from the contact sensor.

23. (Original) The apparatus of claim 1 wherein the apparatus further comprises an diagnostic sensor and controller which controls the radiation emitter based on signals from the diagnostic sensor.

24. (Original) The apparatus of claim 1 wherein the apparatus further comprises at least one thermally conductive element for extracting heat from the emitter.

25. (Original) The apparatus of claim 24 wherein the thermally conductive element comprises a fluid heat transfer medium.

26. (Original) The apparatus of claim 24 wherein the apparatus further comprises a handle that serves as a heat sink.

27. (Original) The apparatus of claim 24 wherein the thermally conductive element comprises a phase change material.

28. (Original) The apparatus of claim 24 wherein the apparatus further comprises a heat transfer element for heating a portion of the oral cavity with waste heat from the apparatus.

29. (Cancelled)

30. (Previously Presented) The apparatus of claim 1 wherein said at least one radiation emitter is positioned relative to said bristles, when an end of said bristles are positioned against a tooth tissue, to emit radiation in the direction of a portion of the oral cavity selected from the group of a tooth, cheek, tongue, palate, throat and facial tissue, lymphatic tissue, blood, gland, follicle, collagen and pigmentation.

31. (Original) The apparatus of claim 1 wherein the apparatus further comprises an ultrasound generator for delivering acoustic energy to a target tissue site.

32. (Original) The apparatus of claim 1 wherein the apparatus further comprises a vibrating element for applying intermittent pressure to a target tissue site.

33. (Original) The apparatus of claim 1 wherein the apparatus further comprises a drug delivery port.

34. (Original) The apparatus of claim 1 wherein the apparatus further comprises an energy reflector for redirecting phototherapeutic radiation towards a target tissue site.